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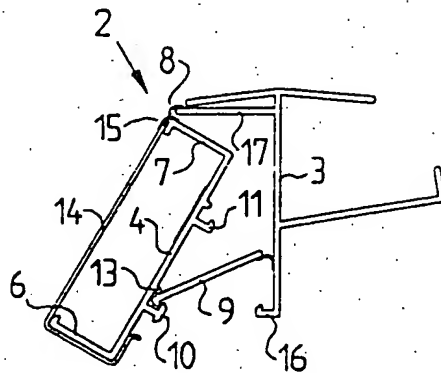
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## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(21) International Application Number: PCT/SE93/00143 (22) International Filing Date: 22 February 1993 (22.02.93)  (30) Priority data: 9200944-8 26 March 1992 (26.03.92) SE 9201953-8 24 June 1992 (24.06.92) SE  (71) Applicant (for all designated States except US): HL Display AB [SE/SE]; Vendelsövägen 21, S-135 51 Tyresö (SE). (72) Inventor; and (75) Inventor/Applicant (for US only): REMIUS, Liz [SE/SE]; Kulvägen 4, S-135 51 Tyresö (SE).  (74) Agents: AXELSSON, Rolf et al.; Kransell & Wennborg AB, Box 27834, S-115 93 Stockholm (SE).		(81) Designated States: JP, US, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).  Published With international search report. In English translation (filed in Swedish).

(54) Title: A DEVICE FOR HOLDING INFORMATION CARRIERS



## (57) Abstract

A device for holding information carriers, such as carriers which describe the nature of the goods on display, the prices of the goods, article numbers, etc. The holder (2) includes a mounting part (3) which is intended to be mounted on the front edge-surfaces of a shelf, a goods display compartment, wire-baskets and corresponding devices, and a part (4) which is joined to the mounting part and which is intended to receive the information carrier (5). The information-carrier receiving part (4) is hinged to the mounting part (3). In order for the information-carrier receiving part (4) and the mounting part (3) to be adjusted to different angles therebetween, one of these parts is provided with a support leg (9) which is hinged to the part concerned. The other part of the holder is therewith provided with at least two support elements (10, 11) which are located at mutually different heights and which are intended to receive the free end-part of the support leg (9).

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A Device for Holding Information Carriers

The present invention relates to a holder device for holding information carriers, for instance information carriers which describe the nature of the goods displayed, the price of the goods, article numbers relating thereto, and like information, said holder including a holder mounting part which is intended to be fitted to the front edge surfaces of shelves, to goods display compartments, to wire-baskets or trays and like goods display means, and an information carrier receiving part which is pivotally connected to said mounting part so as to enable said parts to be adjusted to different angles therebetween.

Holders of this kind are used to a large extent in grocery stores and in department stores in order to display information relating to different goods and articles displayed, and also to the price of such goods and articles. When the holders are mounted on the front edge surface of, for instance, a low or a high shelf, it may be difficult for a customer to read the information presented on the information carrier. This difficulty is encountered with the earlier used label-type information carriers, but is even more pronounced with the novel electronic information presenting units that have begun to be used and which include an LCD-display. A display of this nature can be used in stores very effectively, since the information presented can be changed by remote control, for instance with the aid of radiowave transmitters, infrared light or by signalling conductors. The letters and digits on the display are clear and distinct and can be readily discerned when standing in front of the display but can be difficult to read when the surface of the display defines an acute angle with the

line of vision of the viewer.

5 This problem has earlier been taken into consideration, and the strips used when mounting the holders, for instance on the front edge surface of a shelf, have been produced with different angles between the strip holder parts and their mounting parts. Naturally, the use of such a system is made more expensive by the necessity of manufacturing and storing a full  
10 assortment of strips. It has also earlier been proposed to use strips which can be mounted at different angles in relation to a mounting part. Such two-piece devices, however, are complicated to use and increase costs both with regard to manufacture and use.

15 The main object of the present invention is to provide a single-piece holder for supporting information carriers which, among other things, eliminates the aforesaid drawbacks of earlier known devices and which  
20 when mounting the holder will enable the information carrier to be adjusted readily to a viewing angle that is commensurate to the height at which the holder shall be mounted.

25 Accordingly, an inventive device for holding information carriers of the kind defined in the first paragraph of this document is mainly characterized in that the mounting part or the information-carrier receiving part is provided with a support leg which is pivotally  
30 connected to the part concerned, and in that the other part is provided with at least two support elements which are located at different heights and which are intended to receive the free end-part of the support leg.

35

A holder of this construction enables the viewing

angle to be readily adjusted without needing to separate the mounting part from the holder part. The angle can also be adjusted subsequent to mounting the device on, for instance, the front edge surface of a shelf, therewith always enabling the information carrier to be adjusted to an angle at which readability is at an optimum.

In order to achieve the best function, the support leg is preferably pivotally joined to the mounting part or to the information-carrier receiving part at a distance from the upper edge of the part concerned. Furthermore, the support leg may be provided with a projection which is spaced from the free end-part and which can be brought into engagement with one of the support elements in a manner to enable the angle of the information carrier to be further adjusted.

Those parts of the support leg which coact with said support elements are conveniently so constructed as to lock the holder in the angular position to which it has been adjusted. To this end, both the free end-part of the support leg and the projection spaced from the free end-part and said support elements may be provided with mutually coacting hooked members which firmly lock one another.

In the case of one particularly preferred embodiment in which the information-carrier receiving part has a given thickness so as to enable it to receive an LCD-display or some corresponding device, the pivotal connection between this part and the mounting part is located along the upper forward edge of the information-carrier receiving part.

This will prevent the upper edge of the information-

carrier receiving part from being located at different levels in dependence on the angle to which said receiving part is adjusted, which could otherwise present a disadvantage when removing goods and articles from respective shelves and placing goods and articles on said shelves. When several holders are mounted in a row and adjusted to different angles of inclination, the varying heights of the upper surface of the holders may also be experienced as less attractive from an aesthetic aspect and give the impression of disorder.

The holder is preferably made from an extruded, plastic profiled section in which the hinges are comprised of section parts of smaller thickness than the immediately adjacent parts. In this regard, the support leg is conveniently connected to the mounting part, and the support elements are disposed on the rear side of the information-carrier receiving part.

Other characteristic features of the invention will be evident from the following Claims.

The invention will now be described in more detail with reference to exemplifying embodiments thereof and also with reference to the accompanying drawings, in which

Figures 1-3 are side views of a first embodiment of an inventive holder, and show the holder in three different angular positions;

Figure 4 illustrates the opening function of the front of the holder illustrated in Figures 1-3;

Figures 5 and 6 are side views of two other embodiments of an inventive holder, each showing the holder

adjusted to one of several possible angular positions;

Figures 7-9 are side views of a further preferred embodiment of an inventive holder, and show the holder in three different angular positions; and

Figures 10-12 are perspective views of the holder illustrated in Figures 7-9 mounted on a shelf.

Figures 1-3 illustrate the front edge surface of a shelf on which an information-carrier holder 2 is mounted. The holder is comprised of an extruded profiled plastic strip which has a mounting part 3 by means of which the holder can be mounted on the shelf 1, and an information-carrier receiving part 4. In the illustrated case this information carrier has the form of an electronically controlled LCD-display 5. The receiving part 4 of the holder includes a lower and an upper bar 6 and 7 respectively, between which the LCD-display 5 can be inserted from one side of the holder, for instance. The receiving part 4 is hinged to the mounting part 3 by virtue of a section part 8 whose thickness is smaller than the thickness of immediately adjacent section parts and which thus functions as a hinge.

The mounting part 3 is hinged in a similar manner to a support-and-adjusting leg 9, which enables the angle of the receiving part 4 to be adjusted in relation to the mounting part 3. To this end, the receiving part 4 is provided on its rear side with two support elements 10 and 11 with which the support leg is able to coact. The adjusting leg 9 is located at a distance from the upper portion of the mounting part, which affords better stability among other things.



The angular adjustment facility described above may be necessary in order to enable the information presented on the LCD-display 5 to be read easily at the height at which the display is located in relation to the viewer's line of vision.

In Figure 1, the display 5 is located above eye level, and is therewith able to define a negative angle of 5-10° with the vertical plane. A projection 12 on the support leg 9 coacts with the support element 11 such that hook-shaped parts of said projection or said support element lock the holder parts in the angular position to which they have been adjusted, see Figure 1A.

Figure 2 illustrates the angular position of the holder when mounting the holder on a shelf which is located slightly beneath eye level. In this case, the angle between the display 5 and the vertical plane may conveniently be 15-20°. To this end, the lower, free end-part coacts with the support element 10 on the receiver part 4 in a locking fashion, as illustrated clearly in Figure 2A.

Finally, Figure 3 illustrates an angular position that can be used when mounting the holder on a very low shelf, wherein the support leg 9 coacts with the upper support element 11 on the holder part 4 and locks the holder in the illustrated angular position, see Figure 3A. In this case, the angle may be about 45°.

In the illustrated case, three positions can be achieved with the aid of one single support element, and these positions can be chosen subsequent to having mounted the holder on a shelf, so as to enable the display device to be adjusted to the best reading

angle. Naturally, the holder can be given more adjustment possibilities if so desired. For instance, this can be achieved by providing the information-carrier receiving part 4 with a further support element or  
5 further support elements for coaction with the support leg 9.

All of the adjustment possibilities can be realized without any part of the holder projecting outwardly  
10 therefrom. Thus, the holder can be mounted on a shelf front-surface which has a greater vertical extension than the holder, or on a flat wall, such as on the side of a box or the like.

An advantage is gained when the holder can be adjusted to a certain angle and locked in this angle, as illustrated in Figures 1A-1C, so that the setting of the holder will not be changed if it is touched unintentionally. This is achieved in accordance with the  
15 illustrated embodiment by virtue of the coaction between the mutually engaging hook-shaped parts and the carrier-receiving part 4 itself or with the projection 13 thereon. Such engagement will prevent the parts from being separated, unless a special tool or  
20 great force is used to this end.

In the illustrated embodiment, the LCD-display is protected by means of a transparent plastic front cover  
14 which is hinged to the holder and which can be  
30 swung-up to provide access to the display, as illustrated in Figure 4. The front cover 14 is joined to the remainder of the holder device by means of a part 15 which functions as a hinge. When the front cover is lowered, the cover will snap around the bottom bar 6  
35 of the receiving part 4. The mounting part, the information-carrier receiving part and the openable front

cover are all manufactured in the form of an integrated strip, therewith greatly simplifying manufacture, mounting and use of the device.

5 Figure 5 illustrates another embodiment of the invention which is intended for a thinner display unit than the one before mentioned. The adjustment possibilities are the same as those described above.

10 Figure 6 illustrates an inventive holder which is provided with a pocket 18 intended for receiving paper labels and having a transparent front surface. The pocket 18 can be opened by pressing on the bottom part of the pocket, in the direction of the arrow A. The  
15 force applied will cause the pocket to open at its upper edge, as a result of the lever arm effect thus generated, wherein price tags or labels can be inserted into the pocket and removed therefrom through the top pocket opening.

20 The preferred embodiment illustrated in Figures 7-12 is particularly intended for receiving, for instance, a relatively thick LCD-display, wherein the hinge part 8 is located along the top forwardly and longitudinally extending edge of the receiving part, which  
25 affords important advantages, as made evident in the following. To this end, the mounting part 3 has a part 17 which projects out over the receiving part 4, and the hinge 8 is located at the front edge of said part  
30 17.

Figure 7 illustrates the holder mounted at or above eye level, such that the holder defines an angle of  $0^\circ$  to the vertical plane. In this case, the support  
35 element 10 coacts with a projection 16 on the mounting part 3 and the hook-shaped parts of said projection

coact with respective support elements such as to lock the mounting part and the receiving part at the angle to which they are adjusted.

5     Figures 8 and 9 illustrate the angular position of the holder when mounted on a shelf which is slightly below eye level, Figure 8, and on a very low shelf, Figure 9, respectively. In these cases, the angle defined by the display-receiving part 4 and the vertical plane is 10     30° and 60°, respectively. The lower, free end-part of the support leg 9 coacts with the lower support element 10 and the upper support element 11, respectively, on the display-receiving part 4, in a locking fashion.

15     One very important advantage afforded by the holder illustrated in Figures 7-9 is that the display-receiving part 4, irrespectively of the angle to which it is adjusted, will not project up above the mounting 20     part 3 and the shelf to which it is mounted, due to the positioning of the hinge 8 at the front edge of said receiving part. This will best be seen from Figures 10-12, which show the holder of Figures 7-9 mounted on a shelf 1 at given angles. Figures 10-12 25     also illustrate schematically an LCD-display 5 inserted in the display-receiving part 4. As will be seen from these Figures, the display-receiving part will not impede the removal from or the placing of articles onto the shelf 1, irrespectively of the angle to which 30     the receiving part is adjusted, since the holder will never project above the shelf. This also provides advantages from an aesthetic aspect, since sequentially mounted holders will have a common upper line, irrespectively of the angles to which they are adjusted, 35     which is an advantage.

Although the invention has been described above with reference to a number of preferred exemplifying embodiments thereof, it will be understood that these embodiments may be modified in several respects within the scope of the following Claims. For instance, the support leg 9 may be pivotally connected to the display-receiving part 4 instead of to the mounting part 3, in which case the latter part is provided with appropriate support elements for coaction with the support leg. Furthermore, the mounting part 3 may, of course, be modified with view to the necessity of enabling the holder to be mounted on desired constructions. The elements which function to secure the illustrated LCD-display may also be modified in accordance with requirements. For instance, these elements may be modified to enable the display to be snapped into position from the front of the display-receiving part, instead of being inserted from one side of said part. The protective covering may be omitted, if desired.

CLAIMS

1. A device for holding information carriers, such as carriers which describe the nature of the goods or articles displayed, the price of such goods or articles, article numbers, etc., in which a holder (2) includes a mounting part (3) which is intended to be mounted on the front side-edges of shelves, goods display compartments, wire-baskets and corresponding devices, and a part (4) which is joined to the mounting part (3) and which is intended to receive the information carrier (5) and in which the information-carrier receiving part (4) is joined pivotally to the mounting part (3) so as to enable these parts to be adjusted to different angles therebetween, characterized in that the mounting part (3) or the information-carrier receiving part (4) includes a support leg (9) which is pivotally joined to the part concerned; and in that the other part has at least two support elements (10, 11) which are located at two mutually different heights and which are intended to receive the free end-part of the support leg (9).

2. A holder according to Claim 1, characterized in that the support leg (9) is hinged to the mounting part (3) or to the information-carrier receiving part (4) at a distance from the upper edge of the part concerned.

3. A holder according to Claim 1 or 2, characterized in that the support leg (9) includes a projection which is spaced from the free end-part and which can be brought into engagement with one of the support elements (10, 11) to enable the parts to be adjusted to a further angle.

4. A holder according to any one of Claims 1-3, characterized in that those parts of the support leg (9) which coact with the support elements (10, 11) are so configured that said parts will be firmly locked in relation to one another in the selected angular position of said parts.

5. A holder according to any one of Claims 1-4, characterized in that the information-carrier receiving part (4) has a thickness which will enable it to receive an LCD-display or like device; and in that the hinge connection (8) between the information-carrier receiving part (4) and the mounting part (3) is located along the upper forward edge of the information-carrier receiving part (4).

6. A holder according to Claim 5, characterized in that the mounting part (3) has a part which projects out over the information-carrier receiving part; and in that said hinge (8) is located along the front edge of this outwardly projecting part.

7. A holder according to any one of Claims 1-6, characterized in that the holder is comprised of an extruded profile section; and in that the hinges (8, 12) are comprised of material parts which have smaller thickness than the immediately adjacent parts.

8. A holder according to any one of Claims 2-7, characterized in that the support leg (9) is hinged to the mounting part (3); and in that the support elements (10, 11) are arranged on the rear side of the information-carrier receiving part (4).

9. A holder according to any one of Claims 1-8, characterized in that the information-carrier receiving part (4) has an openable front (14) in the form of a transparent, plastic cover hinged to said part.

10. A holder according to Claim 9, characterized in that the information-carrier receiving part (4) includes a bottom and a top bar (6, 7) between which an information carrier (5) such as an LCD-display can be inserted; and in that the cover (14) is intended to be snapped firmly over the bottom bar (6).



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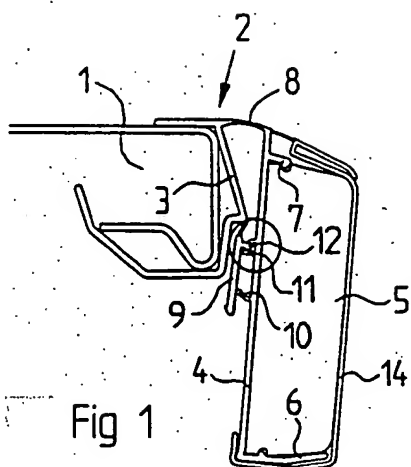


Fig 1

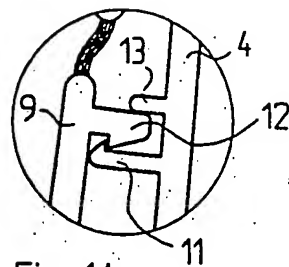


Fig 1A

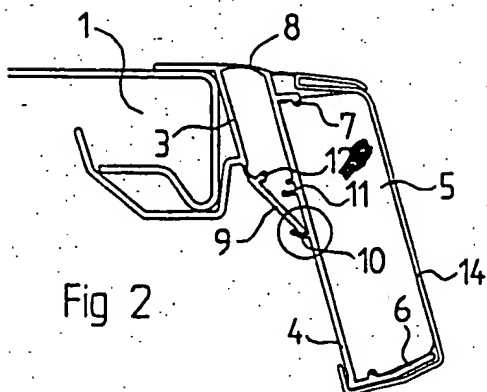


Fig 2

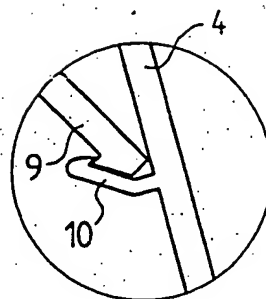


Fig 2A

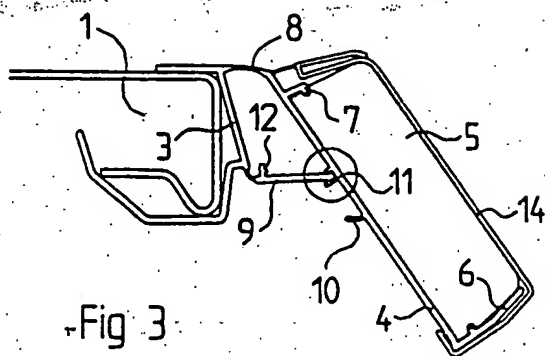


Fig 3

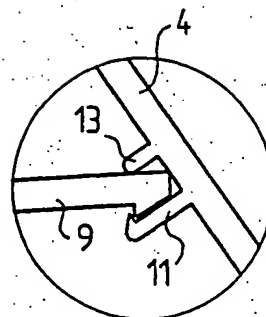
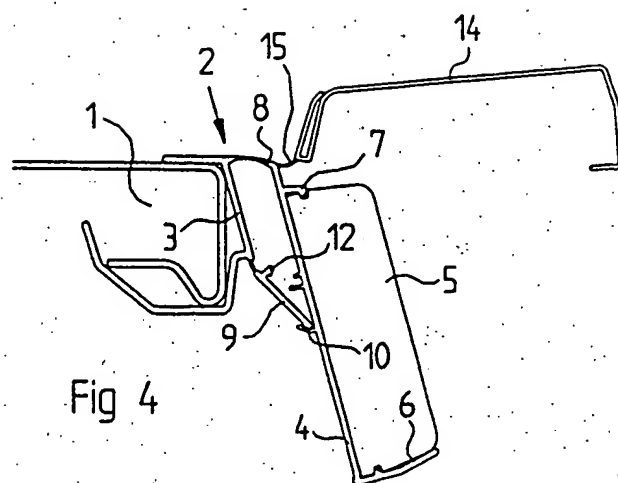
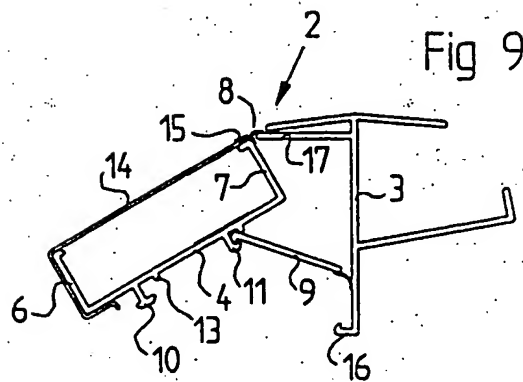
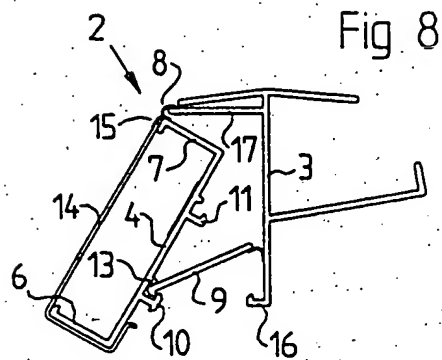
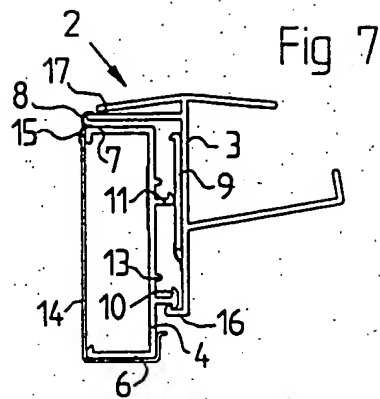


Fig 3A



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Fig 10

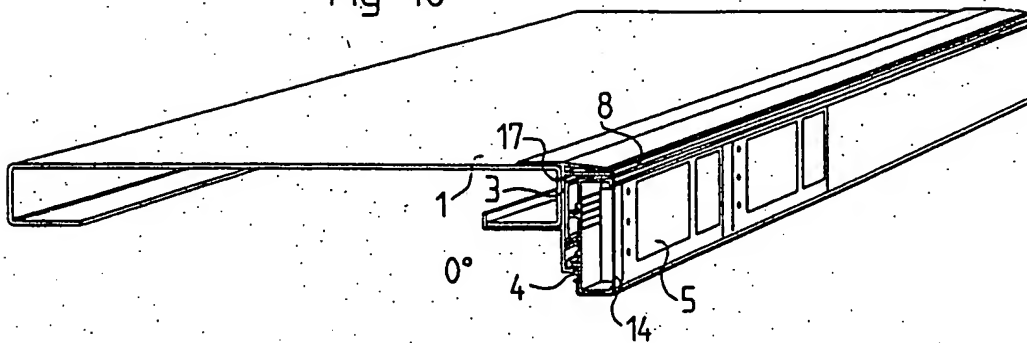


Fig 11

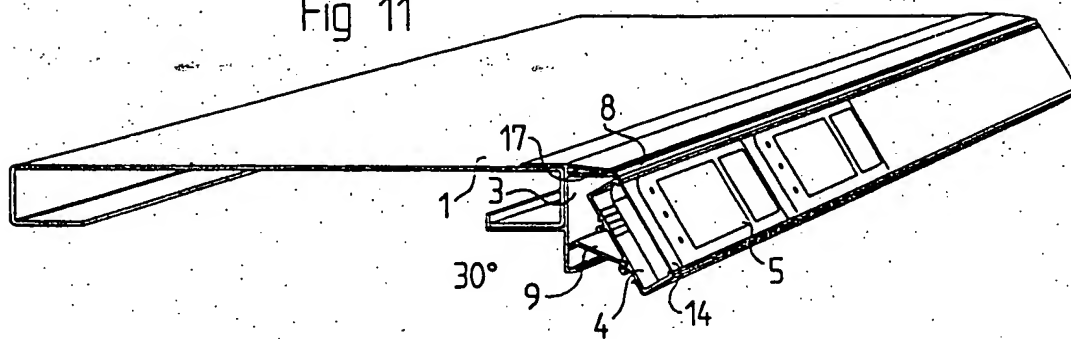
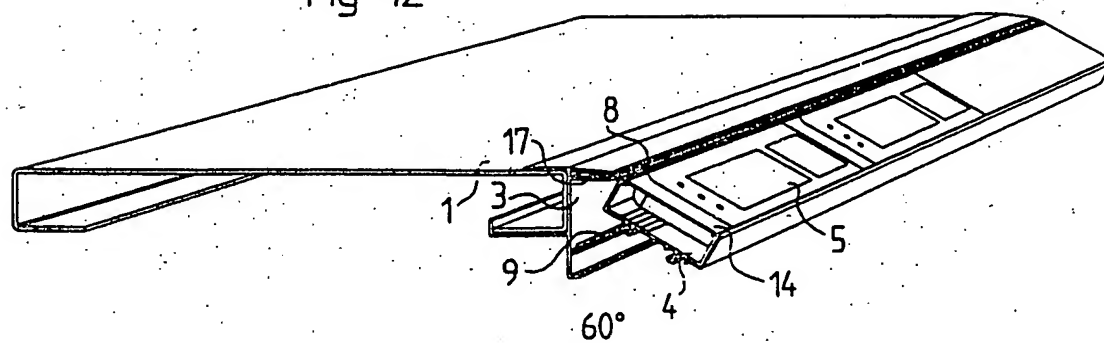


Fig 12



## INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 93/00143

## A. CLASSIFICATION OF SUBJECT MATTER

IPC5: G09F 3/20

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

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Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP, A1, 0377772 (KUNSTSTOFF-VERARBEITUNGS GMBH DIRK A. BRÜGMANN & AUGUST FISCHER GMBH SCHILDERFABRIK), 18 July 1990 (18.07.90)	1-10
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A	EP, A2, 0392137 (REHAU AG + CO), 17 October 1990 (17.10.90)	1-10
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A	EP, A2, 0484635 (REHAU + CO), 13 May 1992 (13.05.92)	1-10
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Date of the actual completion of the international search.

3 June 1993

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**INTERNATIONAL SEARCH REPORT**  
Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP-A1- 0377772	18/07/90	DE-C- 3900904	01/02/90
EP-A2- 0392137	17/10/90	DE-U- 8904664 US-A- 5044104	01/06/89 03/09/91
EP-A2- 0484635	13/05/92	CA-A- 2054940 DE-U- 9015215	07/05/92 17/01/91